

INTERNATIONAL SEARCH REPORT

In International Application No
PCT/GB2004/002755

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/427 A61K31/4192 A61K31/4196 A61K31/433 A61P35/00
A61P31/12 A61P19/02 A61P11/06 A61P3/10 A61P17/00
A61P25/00 A61P25/28 A61P37/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, BIOSIS, EMBASE, WPI Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|----------------------------|
| X | WO 01/34580 A (BEIGHT DOUGLAS WADE ; MCMILLEN WILLIAM THOMAS (US); LILLY CO ELI (US);) 17 May 2001 (2001-05-17) abstract page 3, line 26 - page 4, line 12 page 23, line 13 - page 31, line 9; claims 20,28; examples 1-17; table 1 page 6, line 10 - page 7, line 9 | 1-9, 11-14, 20,22-26 |
| X | US 5 869 509 A (GRIBKOFF VALENTIN K ET AL) 9 February 1999 (1999-02-09) abstract column 5, line 40 - column 30, line 11 examples 11-19,21-38,40-57,61-63,65-120 claims 1-14; examples 122,126-134,136-146 ----- -/-- | 1-9, 11-16, 20,22-26 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *A* document member of the same patent family

Date of the actual completion of the international search

26 October 2004

Date of mailing of the international search report

08/11/2004

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
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| X | DE 43 20 801 A (FAHLBERG LIST PHARMA GMBH) 5 January 1995 (1995-01-05) abstract claims 1-3; examples 4,5; tables 1,2 ----- | 1-9,20, 22-26 |
| X | EP 1 293 503 A (MERCK PATENT GMBH ; YAMANOUCHI PHARMA CO LTD (JP)) 19 March 2003 (2003-03-19) abstract page 3, line 41 - page 8, line 32 page 20, line 3 - page 42, line 39; examples 1-288 ----- | 1-9, 11-16, 20,22-26 |
| X | EP 1 070 708 A (HOFFMANN LA ROCHE) 24 January 2001 (2001-01-24) the whole document ----- | 1-9, 11-16, 20,22-26 |
| X | WO 99/64415 A (KATO TOMOKI ; PFIZER PHARMA (JP); ANDO KAZUO (JP); KAWAI AKIYOSHI (JP)) 16 December 1999 (1999-12-16) abstract page 3, line 24 - page 4, line 24; claims 1-15; examples 1-198 ----- | 1-4,7,8, 14-18, 20-26 |
| X | WO 03/015777 A (GIEGRICH KRISTINA ; BAUER ULRIKE (DE); DEUSCHLE ULRICH (DE); KOGL MANF) 27 February 2003 (2003-02-27) abstract paragraphs '0014!', '0015!', '0025! - '0033! paragraph '0085!; claims 1-32; tables 3-6 ----- | 1-3,7-9, 11,12, 14-16, 20,22-26 |
| X | FR 2 258 180 A (CERMOL SA) 18 August 1975 (1975-08-18) the whole document ----- | 1,3,8,9, 15,16, 20,22-26 |
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| X | WO 99/40088 A (DIMENSIONAL PHARM INC) 12 August 1999 (1999-08-12) abstract page 5, line 16 - page 6, line 10; example 196 ----- -/- | 1-3,7-9, 14,15, 20,22-26 |

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
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| X | US 5 489 598 A (CONNOR DAVID T ET AL) 6 February 1996 (1996-02-06) column 2, lines 5-12; examples 1-61 | 1-9, 11, 12, 14-16, 20, 22-26 |
| X | WO 01/07436 A (BURNS CHRISTOPHER J ; CHOI SLEDESKI YONG MI (US); LAU WAN F (US); PAUL) 1 February 2001 (2001-02-01) abstract; example 1201 page 395, line 1 - page 397, line 14 | 1-3, 7-9, 15, 20, 22-26 |
| X | FEVIG JOHN M ET AL: "Synthesis and SAR of benzamidine factor Xa inhibitors containing a vicinally-substituted heterocyclic core" BIOORGANIC AND MEDICINAL CHEMISTRY LETTERS, vol. 11, no. 5, 12 March 2001 (2001-03-12), pages 641-645, XP002301746 ISSN: 0960-894X the whole document | 1-6, 8, 11, 17, 19, 21, 24-26 |
| P, X | WO 03/101985 A (AMGEN INC ; NGUYEN THOMAS (US); NORMAN MARK H (US); WANG HUI-LING (US)) 11 December 2003 (2003-12-11) abstract page 33, line 1 - page 36, line 27; claims 1, 15-39; example 42 | 1-4, 7-9, 14-16, 20, 22-26 |
| P, X | WO 03/104207 A (MERCK & CO INC ; OLSON STEVEN H (US); ZHU YUPING (US); BALKOVEC JAMES) 18 December 2003 (2003-12-18) abstract page 5, line 16 - page 16, line 21 page 58, line 1 - page 60, line 3; claims 1-29; examples 3-15 | 1-9, 11, 12, 15, 16, 20, 22-26 |
| P, X | WO 2004/030611 A (GIRARDET JEAN-LUC ; HERNANDEZ MARTHA A DE LA ROSA (US); GUNIC ESMIR (U)) 15 April 2004 (2004-04-15) abstract page 3, lines 18-28; tables 2, 4 | 1-3, 5-9, 11-16, 20, 22-26 |

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claim 22 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Although claim 22 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box II.2

Claims Nos.: -

There are two claims 17 and no claim 20. For the purposes of the search report, the second claim number 17 has been considered as claim number 18, the claim 18 has been considered as claim 19, claim 19 has been considered as claim 20.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

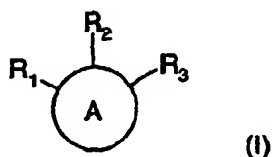
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Box No: IV Text of the abstract (Continuation of item 5 of the first sheet)

Compound of a compound of formula (I) or a salt, N-oxide, hydrate or solvate thereof, in the preparation of a composition for inhibition of HSP90 activity:



wherein ring A is an aromatic or non-aromatic carbocyclic or heterocyclic ring having 5 ring atoms, for example a 1,2,3-triazolyl or a 1,2,4-triazolyl or a tetrazolyl ring; and R₁, R₂, R₃ are as defined in the specification are inhibitors of HSP90 and therefore of use in the treatment of, for example, cancers, viral disease, inflammatory diseases such as rheumatoid arthritis, asthma, multiple sclerosis, Type I diabetes, lupus, psoriasis and inflammatory bowel disease; cystic fibrosis, angiogenesis-related disease such as diabetic retinopathy, haemangiomas, and endometriosis; or for protection of normal cells against chemotherapy-induced toxicity; or diseases where failure to undergo apoptosis is an underlying factor; or protection from hypoxia-ischemic injury due to elevation of Hsp70 in the heart and brain; scrapie /CJD, Huntingdon's and Alzheimer's disease.

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